R E P O R T R E S U M E S

ED 011 612 24

SUBCULTURAL DIFFERENCES IN CHILDREN'S LANGUAGE DEVELOPMENT.

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REPORT NUMBER BR-6-1610-2 PUB DATE MAY 67
GRANT OEG-2-7-061610-0207
EDRS PRICE MF-$0.09 HC-$1.16 29P.

DESCRIPTORS- *VERBAL DEVELOPMENT, *RURAL URBAN DIFFERENCES, RACIAL DIFFERENCES, *LANGUAGE DEVELOPMENT, *ENVIRONMENTAL INFLUENCES, LANGUAGE ABILITY, *SOCIOLINGUISTICS, LINGUISTICS, INTERVIEWS, SOCIOECONOMIC STATUS, CULTURALLY DISADVANTAGED, BALTIMORE

PATTERNS OF THE LINGUISTIC DEVELOPMENT OF CHILDREN OF DIFFERENT SOCIOECONOMIC ENVIRONMENTS WERE DETERMINED BY A STUDY OF WORD ASSOCIATIONS. THE RELATION OF RESIDENTIAL AREA, SOCIAL CLASS, OR SUBCULTURAL GROUP MEMBERSHIP TO LINGUISTIC DEVELOPMENT WAS THE MAIN CONCERN OF THE STUDY. EACH MEMBERSHIP GROUP WAS FURTHER CATEGORIZED ACCORDING TO IQ LEVEL, SEX, AND GRADE. GROUPS WERE COMPARED BY HOLDING CONSTANT AGE AND IQ. THE WORD ASSOCIATIONS WERE OBTAINED IN RESPONSE TO A LIST OF 96 STIMULUS WORDS. EACH CHILD WAS INTERVIEWED ALONE, AND WAS ASKED TO RESPOND WITH THE FIRST WORD THOUGHT OF AS THE INTERVIEWER SAID A WORD ALOUD. RESULTS OF THE STUDY SUPPORT THE FOLLOWING CONCLUSIONS--(1) THERE ARE NEGLIGIBLE DIFFERENCES BETWEEN SURBURBAN CHILDREN FROM UPPER MIDDLE CLASS AND BLUE COLLAR NEIGHBORHOODS, (2) RURAL MARYLAND CHILDREN TEND TO DEVELOP MORE SLOWLY THAN THE SUBURBAN CHILDREN, ESPECIALLY THOSE WHOSE IQ IS AVERAGE OR BELOW, (3) AMISH CHILDREN DEVELOP EVEN MORE SLOWLY THAN THE RURAL MARYLAND CHILDREN, AND (4) WHITE SLUM CHILDREN ARE ADVANCED COMPARED TO SUBURBAN CHILDREN AT FIRST GRADE, BUT RETARDED AT THIRD GRADE. NEGRO SLUM CHILDREN ARE GENERALLY BEHIND WHITE SLUM CHILDREN, BUT AT FIRST GRADE THE NEGRO SLUM CHILDREN ARE ON A PAR WITH WHITE SUBURBAN CHILDREN. RELATED REPORTS ARE AA 000 046 AND AA 000 048. (AL)

AA000047

BR-6-1610-2
OEG-2-7-061610-0201
BA 24

THE JOHNS HOPKINS UNIVERSITY
THE CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

ED011612

Subcultural Differences In Children's Language Development[1]

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The Johns Hopkins University

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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Project No. 6-1610
Contract No. OEG-2-7-061610-0207

Doris R. Entwisle

May 1967

The research reported herein was performed pursuant to a grant with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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ACKNOWLEDGMENTS

The preparation of this paper was supported by The Center for the Study of Social Organization of Schools, The Johns Hopkins University. Most of the Research upon which it is based was supported by the National Institute of Child Health and Human Development, grant HD-00921.

I am grateful to James Coleman, Robert Gordon, Edward McDill, and Arthur Stinchcombe for critical reading of this paper.

I. INTRODUCTION

Word associations, although long a topic for psychological inquiry, have only within the last decade assumed prominence among the tools of developmental psycholinguistics. Two pioneering studies, one by Brown and Berko (1960) and another by Ervin (1961), show correlation between the prevalence of paradigmatic associations and the grammatical competence of the child. Independent evidence of the validity of word associations as an index of language maturity is that children's free associations are highly related to word comprehension and ability to place words in appropriate contexts (Riegel, Riegel, Smith and Quarterman, 1964). Also a high correlation is observed between semantic meanings and primary associates (Di Vesta, 1966). Other studies (Entwisle, Forsyth, and Muuss, 1964; Entwisle 1966a, 1966b, 1967a, 1967b) confirm both the sharp rise in paradigmatics over ages 5 to 8 and the replacement of syntagmatic with paradigmatic associates. (The syntagmatic-paradigmatic shift, although discovered 50 years ago (Woodrow and Lowell, 1916), has received little attention until lately.) High-speed data-processing equipment has opened the door to cross-cultural study of linguistic development using word associations of children from different social classes and different cultural groups. This paper reports subcultural variations in language development for children from 4 to 10 years of age, and speculates upon the socialization and cultural factors that spawn the differences. It is not very clear what specific environmental factors are important in verbal development and the major concern here is to elucidate those factors.

This research, which began in 1961, was undertaken partly to provide normative word association data for sizeable groups of young children, and partly to shed light on the course of linguistic development. The present research differs from other studies of associations in that the intelligence level of various samples of children is specified rather closely and the socio-cultural environment, including the school milieu, is described in detail. As expected, intelligence (measured IQ) is highly related to appearance of paradigmatic associates, especially for the younger children. Intelligence is of secondary interest here, however. Residential locus, social class, or subcultural group membership, and their relation to linguistic development is the main focus of this paper. Insofar as possible, social class is conceived in fairly specific terms--median income, father's educational level, quality of school attended, housing conditions, and so forth.

II. METHOD

Several different groups of children at first-, third-, and fifth-grade have been studied. Rural American children, both Amish-Pennsylvanian and a cross-section of typical Maryland farm children, and some rural German children, are represented. Urban Baltimore children of three different socioeconomic levels, upper middle class, blue collar, and slum, are also represented. Baltimore City has a population of

about one-million persons. Entirely surrounding the City is Baltimore County, and the City and County have separate school systems. The racial composition of schools is vastly different, with about 3 per cent Negro pupils in the County compared to 60 per cent Negro in the City, but in neither place are Negroes homogeneously distributed. For upper middle and working class, only white children are studied and they live in the suburbs (Baltimore County). For the lowest socio-economic group, slum residents of Baltimore City, equal numbers of Negro and white children were procured.

Each residential or socioeconomic group is further categorized according to IQ level, sex, and grade, and groups can be compared holding constant age and IQ. Three IQ strata are defined: Low IQ (85 or below); medium IQ (95-105); and high IQ (122 or higher). IQ data were mostly taken from school records. Not all IQ strata are represented in all residential groups. For instance, there are no "high IQ" slum children. Background data on the different groups are given in Table 1 which displays the incomplete factorial design of the sampling plan. Figure 1 shows geographical locations of sample clusters.

The Amish, a distinct subcultural group who develop in a considerably different cultural stream from rural Maryland children, reside on farms north of the Maryland-Pennsylvania line (see Fig. 1). They are descended from Anabaptist immigrants of 200 years ago, and are of special interest because religious scruples cause them to isolate themselves from TV sets, radios, and other mass media. Amish child-rearing practices also reduce exposure to spoken language because conversation between adults and children is limited and education is not valued. These children are not economically deprived, for the farms are well-run and prosperous, but automobiles and other "luxuries" are forbidden. The Amish children were interviewed in exactly the same way as the Maryland children, with an Amish woman serving as interviewer.

Briefly, 96 stimulus words, chosen to represent different form classes and, where possible, different degrees of rarity, are used to elicit associations. The Thorndike-Lorge J count was used to estimate frequency (Thorndike and Lorge, 1944). For nouns, adjectives, and verbs, stimuli are divided into 3 strata, one with frequency greater than 1000, a second with frequency 500 to 1000, and a third with frequency below 500. No frequency division was possible for adverbs and pronouns. A young woman interviewed children one at a time, saying aloud each word on the list and then recording the child's response. The child is instructed that he is going to play a "word game", and when the interviewer says a word aloud, he is to respond with the first word he thinks of. Details of administration are given in Entwisle (1966b).

FIGURE I

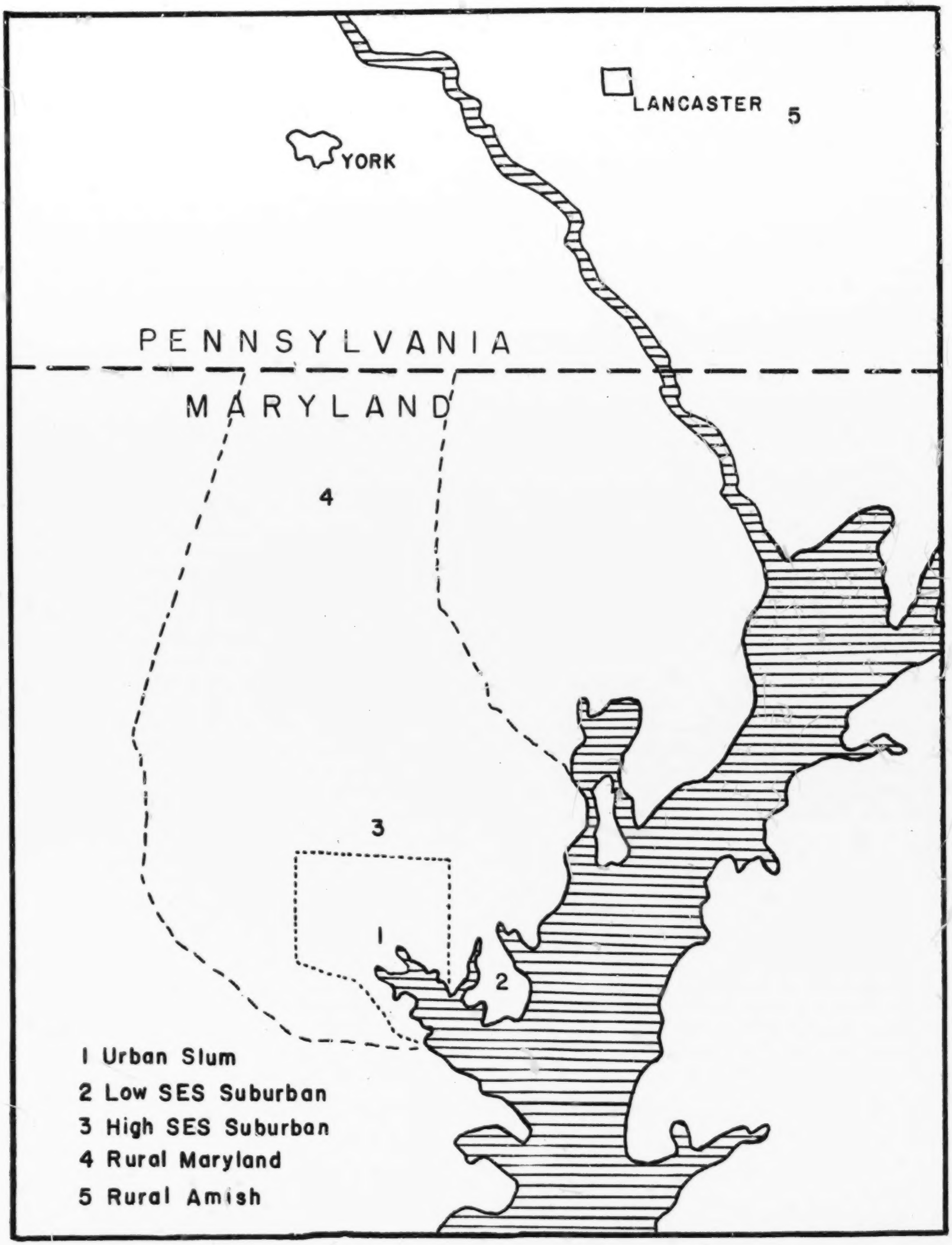
LANCASTER
5
YORK
PENNSYLVANIA
MARYLAND
4
3
1
2
1 Urban Slum
2 Low SES Suburban
3 High SES Suburban
4 Rural Maryland
5 Rural Amish

TABLE 1

Design of Clusters of Children Living In and Around Baltimore, Md.

Grade	Suburban White High-SES (Income est. $9171 p.a.) High-IQ	Med.-IQ	Suburban White Low-SES (Income est. $6219 p.a.) Med.-IQ	Low-IQ
Kindergarten				
N	100		100	
Mean Age	5.6		5.6	
Mean IQ	125		100	
Mean grade completed by father	16.6[a]		12.5[b]	
Grade 1				
N	70	70	70	70
Mean Age	6.4	6.6	6.5	6.7
Mean IQ	129.9	102.6	102.8	75.0
Mean grade completed by father	15.5	13.8	10.5	9.6
Grade 3				
N	70	70	70	70
Mean Age	8.5	8.7	8.7	9.0
Mean IQ	131.5	100.5	100.4	79.8
Mean grade completed by father	15.6	13.4	9.9	8.7
Grade 5				
N	70	70	70	70
Mean Age	10.4	10.7	10.6	10.11
Mean IQ	131.0	100.8	100.1	79.7
Mean grade completed by father	14.7	13.0	10.1	9.7

a. for ninety-nine subjects
b. for eighty-eight subjects

TABLE 1 (cont.)

Grade	Rural Maryland High IQ	Rural Maryland Med. IQ	Rural Maryland Low IQ	Amish IQ	Baltimore slum White Med. IQ	Baltimore slum White Low IQ	Baltimore slum Negro Med. IQ	Baltimore slum Negro Low IQ
Grade 1								
N	20	20	20	20	37	40	29	40
Mean Age	6.6	6.7	6.9	6.9[c]	7.0	7.3	6.5	6.9
Mean IQ	128.1	99.8	77.4	85.3	99.7[d]	79.8[e]	98.1[f]	79.9
Mean grade completed by father	12.9	10.4	7.5	8.0	10.3	8.1	10.5	8.3[g]
Grade 3								
N	20	20	19	20	39	40	40	36
Mean Age	8.6	8.8	9.2	8.7	8.9	10.1	8.6	9.7
Mean IQ	131.9	99.6	78.3	92.8	100.0[h]	80.7[i]	99.7[j]	80.9[k]
Mean grade completed by father	12.2	9.0	8.5	8.0	8.2	8.7	9.4	8.2
Grade 5								
N	20	20	20	20	40	40	40	40
Mean Age	10.4	10.7	11.7	10.9	10.11	11.7	10.9	11.8
Mean IQ	131.9	100.1	77.1	101.1	99.7[l]	80.5[m]	99.5[n]	80.6[o]
Mean grade completed by father	12.3	9.7	7.8	8.0	9.9	8.5	7.3	8.2

c. for two of the twenty children IQ scores were not available
d. for seven subjects
e. for fifteen subjects
f. for ten subjects
g. for six subjects
h. for seventeen subjects
i. for six subjects
j. for five subjects
k. for six subjects
l. for ten subjects
m. for eleven subjects
n. for three subjects
o. for nine subjects

III. RESULTS

Relative Positions of Subcultural Groups. Word associations were analyzed in a number of ways (see Entwisle, 1966a, 1966b, 1967a, 1967b), but the percentage of paradigmatic responses in the various sample strata offers the most convenient way to study relative rates of development (see Table 2). Analyses of variance of paradigmatic rates support the following conclusions about relative rates of development. (All comparisons assume children of the same IQ level.)

(1) There are negligible differences between suburban children from upper middle class and blue collar neighborhoods.

(2) Rural Maryland children tend to develop more slowly than the suburban children, especially those who fall in the lower two IQ strata.

(3) Amish children develop even more slowly than the rural Maryland children.

(4) White slum children are advanced compared to suburban children at first-grade, but retarded at third-grade. Negro slum children are generally behind white slum children, but at first-grade the Negro slum children are on a par with white suburban children.

These observations in American children suggest a relation between rate of development and degree of urbanization. At first-grade the children rank as follows: white slum children, Negro slum children and suburban middle class and working class children of both SES levels, rural Maryland children, and Amish children residing in rural Pennsylvania. Study of rural German children living in Schleswig-Holstein (Entwisle and Muuss, 1967) and of Parisian children (Rosenzweig and Menahem, 1962) suggests a similar rural-urban difference in non-English-speaking children.

Appearance and prevalence of paradigmatic responses is taken as an index of linguistic development, and rates of development among various groups are compared. Differences among groups have been pointed up, but these are related to timing rather than to qualitative factors. It should be emphasized that the sequence of changes and the eventual level of paradigmatic responding are the same for all groups. The paradigmatic response rate is a rough measure and only appropriate over early childhood. Other more refined measures would probably reveal differences at ages 10-11 when paradigmatic response rates have attained fairly constant levels. The increase in paradigmatic responses, the increase in commonality or percentage of primaries, and the diminution in syntagmatic responses are common features in all groups. Pronouns and adjectives develop sooner than verbs and adverbs, and there is only a small increase for nouns. The overall picture looks much the same for all groups and the process itself seems invariant. Some children just take longer than others to pass through the sequence of changes.

Suburban Baltimore Children 1961-63

	Kindergarten		First-grade				Third-grade				Fifth-grade			
			High-SES		Low-SES		High-SES		Low-SES		High-SES		Low-SES	
	High-SES	Low-SES	High IQ	Med. IQ	Med. IQ	Low IQ	High IQ	Med. IQ	Med. IQ	Low IQ	High IQ	Med. IQ	Med. IQ	Low IQ
Nouns	56.3	66.1	66.8	65.1	59.0	59.7	74.8	71.8	73.1	70.7	79.3	78.2	77.1	76.3
Adj.	16.7	16.9	45.7	29.3	30.1	21.7	74.2	71.4	73.3	62.8	81.0	78.2	78.1	77.1
Verbs	16.7	16.6	22.4	21.1	18.7	19.2	57.1	47.4	49.9	35.5	66.6	60.2	57.0	53.6
Adverbs	9.8	7.3	30.9	15.5	16.4	8.8	63.0	50.2	49.1	42.7	70.0	65.2	59.8	53.6
Pronouns	16.6	16.4	43.0	30.2	27.0	19.1	64.6	67.3	64.8	64.6	72.0	63.6	57.5	67.7

	First-grade				Third-grade				Fifth-grade			
	Rural Maryland			Amish	Rural Maryland			Amish	Rural Maryland			Amish
	High IQ	Med. IQ	Low IQ	IQ	High IQ	Med. IQ	Low IQ	IQ	High IQ	Med. IQ	Low IQ	IQ
Nouns	71.7	62.3	57.7	47.7	80.0	69.4	68.5	66.3	78.9	78.9	79.6	73.3
Adjectives	40.4	21.3	13.9	15.4	69.4	67.5	61.5	48.8	82.5	79.6	68.9	72.1
Verbs	25.0	14.6	20.0	16.7	56.9	44.6	35.4	35.6	64.2	60.0	46.0	56.0
Adverbs	31.9	18.7	7.5	13.1	61.3	40.6	34.4	20.6	61.3	70.0	42.5	40.6
Pronouns	41.9	28.1	18.7	23.7	71.9	65.6	45.6	55.6	68.7	71.9	56.3	70.6

Baltimore Slum Children 1965-66

	First-grade				Third-grade				Fifth-grade			
	White		Negro		White		Negro		White		Negro	
	Med. IQ	Low IQ	Med. IQ	Low IQ	Med. IQ	Low IQ	Med. IQ	Low IQ	Med. IQ	Low IQ	Med. IQ	Low IQ
Nouns	57.4	62.8	57.2	51.7	77.2	70.4	72.5	63.6	81.5	76.5	82.4	78.3
Adjectives	45.9	33.9	38.9	24.3	69.1	64.2	63.6	55.0	83.9	78.6	61.0	79.8
Verbs	25.9	23.3	20.2	22.3	38.1	34.7	38.6	31.3	58.1	50.9	58.1	50.5
Adverbs	26.9	15.0	15.9	12.2	40.6	39.7	35.0	30.3	59.7	51.9	60.3	49.4
Pronouns	45.6	32.2	37.5	30.9	69.7	64.1	70.0	60.9	79.1	72.2	70.0	80.3

Results are very surprising in two respects: (1) Rural Maryland children develop more slowly than suburban Maryland children even though the children are of the same age and the same tested intelligence, and are closely matched in terms of schools attended, father's educational level and general economic status; (2) First-grade white children living in the slums of Baltimore City are <u>accelerated</u> compared to first-grade white children living in the suburbs, and first-grade Negro children are <u>not behind</u> white suburban children. It is not so surprising, but it is informative, that rural Amish children lag behind rural Maryland children. Slum children being behind suburban children at third- and fifth-grades is not very surprising either, because reports of verbal or intellectual deficit associated with economic deprivation are legion (see especially reports by Deutsch and his co-workers (1964 to 1966) and by Coleman (1966). In fact, study of slum children was undertaken after study of upper middle class and working class children had shown minimal differences (Entwisle, 1966a, 1966b). It was thought that more extreme economic and cultural deprivation might be associated with language deficits even though mild relative deprivation was not. Results directly counter to expectation are both exciting and challenging.

<u>School Differences</u>. A few words are in order first about schools the children attended.

Many of the suburban children had attended kindergarten but rural children had not. This could account, at least in part, for rural-urban differences. It could <u>not</u> account for rural Maryland vs. Amish differences, because neither group attended kindergarten.

A very large proportion of inner city children (80-90 per cent) attend free kindergartens.[3] We estimate that 75 per cent of the middle class and 30 per cent of the working class children had attended kindergarten. Kindergarten attendance cannot explain the superiority of slum children over suburban upper middle class children, then, because a very large proportion of <u>both</u> groups attended kindergarten. Another fact negating the importance of kindergarten is the equivalence at first-grade of working class and upper middle class suburban children even though many fewer working class children attend. Nevertheless, at first-grade there is some correspondence between the per cent of children in a given residential group attending kindergarten and level of paradigmatic response rates because there are no reversals and some consistencies between paradigmatic level and proportion of kindergarten attendance. A favorable impact of kindergarten is reported by Lee (1951) and Deutsch and Brown (1964).

A strong reason for starting research in Baltimore County was that one large school system enrolls children residing in a 603-square-mile area, and this permits "school factors" to be held constant. (Such a large school district is rare and not typical of the U.S.A.) Rural Maryland children. upper middle class suburban children, and working class suburban children all attend schools under the same

jurisdiction. There is bound to be variation favoring schools nearer the city over rural areas, but this variation is small compared to variations between systems. Salary scales, curricula, textbooks, testing programs, and many other conditions are the same throughout one system. It seems unlikely, therefore, that school quality is a major factor in rural-urban differences. The Amish, of course, attend schools in Pennsylvania (some parochial) and so differences in school quality are completely confounded with rural Maryland-Amish differences. Big differences at first-grade, however, suggest that more than just school factors are involved, because at first-grade the school has had little time to exert an effect.

It is hard to make an overall comparison between schools in Baltimore City and Baltimore County, but generally teacher qualifications in the City are equivalent to those in the County. The physical condition of schools in the inner city is mostly inferior to schools in the County (or to schools in other parts of the city) but this relates more to lack of ancillary facilities like cafeteria, auditorium, sinks in classrooms, and so on, than to lack of educational materials or the basic classroom essentials. The relative advancement of suburban third- and fifth-graders compared to inner city children could be owing, at least in part, to differences in school quality. First-grade slum children being superior is just the opposite from what could be predicted from school quality, but as was mentioned in the case of the rural Maryland-Amish differences, the school's effect has not had much time to be felt at first-grade.

One might question the assignment of children to IQ groups as a possible cause of differences. The same IQ test (PMA) is used for first-graders by the two school systems, but rural children and inner city children may both be in "culturally unfair" positions vis-a-vis standard tests. Thus these children's "true intelligence level" might be higher than the test score indicates. For rural children such a bias would lead one to predict an <u>elevation</u> in verbal development rather than the lag actually observed, because to score at an average level on an unfair verbal test implies that their endowment is underestimated. For slum children it is the <u>pattern</u> of results that vitiates the bias argument. First-graders of average IQ are responding like high IQ (130) suburban children, and third-graders of average IQ are responding like low IQ (80) suburban children. There is no reason to believe that a strong bias at one age would be reversed in direction two years later.

<u>Racial Differences</u>. It is not fully clear what subcultural factors could lead to the differences in paradigmatic rates between white and Negro slum children. They attend similar schools and live close to one another, except that the Negro slum dweller is probably more deprived. (Number of children per family, mothers working and fathers absent, illegitimacy rates, or almost any other measure of social class turns out to be less favorable for Negro slum dwellers (see Keller, 1963).) For census tracts where these particular slum children's schools are located, percentage of unemployment, number of

occupants per room, age of dwelling, and number of women in the labor force are all directly related to percentage of Negroes in the tract. But there seem to be many more similarities than differences between Negro and white slum dwellers, especially when they are being considered with respect to suburbanites.

The dialect cleavage between middle class interviewers and lower class Negro children may be greater than that between these same interviewers and lower class white children, and this might favor the white children. The speech of Negro college girls who served as interviewers resembles that of the white community more than that of the Negro slum.

The most provocative difference that exists between the white and Negro slum groups is in terms of in-migration.[4] For persons who resided outside the Baltimore area 5 years previously, most lived to the south, irrespective of race membership. But proportionately many more Negroes than whites are recent migrants. In the largely Negro (88 per cent) tract, about 10 per cent had moved up from the south in the previous 5 years compared to 2 to 4 per cent in the predominantly white tracts. Persons coming from the south probably come mostly from rural areas of Virginia and other southern states, Baltimore being the first large industrial city going north on the eastern seaboard. The relative advancement of the white over the Negro slum children may thus reflect a rural-urban rather than a racial differential. This will be discussed more fully later.

Racial differences of another kind are related to interviewer effects. There is considerable evidence that word associations are sensitive to administration procedures (see Entwisle, 1966a, p. 35-45) probably because of social pressure that inheres in the role relations of the interviewer and respondent. For this reason the basic factorial design incorporating sex, grade, and IQ as variables, was replicated four times with slum children: white interviewers with white children, Negro interviewers with Negro children, white interviewers with Negro children, and Negro interviewers with white children. Generally higher rates of paradigmatic responding are noted when the race of the interviewer differs from that of the respondent, and low IQ students are most sensitive. (Labov (1966) illustrates at length the differences in oral speech that people exhibit under varying conditions of formality such as speaking to an interviewer, compared to scolding their children.) Both white and Negro children tend to give more paradigmatic responses (more mature behavior) when the race of the interviewer differs from their own. This suggests that racial differences could be at least partly owing to a performance-vs.-knowledge discrepance.

Some preliminary evidence exists that semantic systems of white and Negro children do not completely overlap (Entwisle, 1967b). For instance the primary associate of Negro slum children to "music" is "dance", while less than 4 per cent of white slum children and 1 per cent of suburban white children give this response. Also "chicken" is a high frequency response to "wing" for Negro children but not for

white children. Future work is planned to try to point up differences in semantic and hierarchical systems between Negroes and whites, and also between urban and rural dwellers.

Urbanization. Degree of urbanization, perhaps because of its relation to opportunities for verbal interaction, seems to be generally correlated with rate of development. Opportunities for verbal interchange may be limited for the rural pre-schooler because of isolation of dwellings, lack of kindergartens, and lower exposure to television and radio. Older rural children may be hampered by long bus rides to and from school, and a large number of home and farm chores. Exposure to mass media, especially television, may be a crucial factor in the rural-urban difference because TV reception is less dependable in rural areas and also the time available to watch TV is less for rural children. TV became prevalent later in rural areas than in urban areas, too, so its cumulative impact to date could be smaller. The Amish, who develop even more slowly than the rural Maryland groups, lack TV entirely and this is a tempting explanation for the Amish-rural Maryland difference. (Genetic differences, also a possibility, will be discussed later.)

There is little doubt that in terms of word associations (Entwisle, et al., 1964; Palermo and Jenkins, 1963; Entwisle, 1966a, 1966b) or other measures (Templin, 1957), American children of fifty years ago were not as advanced linguistically as modern children. Modern children may be ahead as much as five years, if we take either primary associates or degree of paradigmatic responding as an index. This is a huge discrepancy.

The relative acceleration of modern children was one observation that prompted study of the Amish children, for in many ways conditions of life for Amish children resemble conditions for Minneapolis children studied by Woodrow and Lowell (1916). The Amish are the slowest to develop of any American group we have observed (even Negro third-grade slum children are faster), but they are considerably in advance of Minneapolis children of 50 years ago.[5] Unfortunately the early data are based mainly on responses to nouns and adjectives, so many kinds of syntagmatic responses that might help in estimating linguistic maturity are not available. Nevertheless, there are more immature patterns (more sequence-type responses) in old data collected before the days of mass media, and also there are more syntagmatic responses of the adjective-noun variety for modern groups living under "old fashioned" conditions. It is very unfortunate that there are no data available for American children around 1945 (just before television was introduced) so that the effect of TV alone, aside from other changes such as magazines, radios, improved curricula, and so on, could be estimated.

Life conditions in the American urban slum may favor rapid development of basic language skills. Houses are crowded, with many children sharing one bed or bedroom, and time outside the house is usually spent surrounded by other children on the street or playground.

Although there is little evidence to cite, and certainly our data shed no light on the point, the pressures upon young slum children to attain some kinds of verbal proficiency may be more powerful than those impinging upon the suburban child. The slum child usually needs to find his own way around and it is not at all uncommon to see pre-school children unattended on sidewalks, near busy streets. Anecdotes are often told of 4-5 year old slum children who are very articulate when stopped on the street and asked for directions by strangers. Lack of close supervision both inside and outside the home could force the young slum child to develop skills in verbal communication at an early age.

Several lines of evidence attest to the high exposure of modern American children to television, some estimates being as high as 5 hours per day, roughly equal to the hours spent in school. In the United States it is estimated that three-year old children already average about 45 minutes of TV a day, and average daily watching time increases to a peak at ages 12 to 13. The cumulative statistics are staggering: during the 13 years of school attendance, the total time spent watching television ranges from 6,000 and 12,000 hours (Schramm, 1964).

We guess that the sheer quantity of exposure (mostly via television) may be <u>the</u> most important factor in accounting for the verbal facility of 6-year-old slum children, with the narrowness of exposure as a secondary but important cause.[6] These two factors will now be discussed in turn.

The slum children were selected to represent the most severe degree of economic and cultural deprivation in the city of Baltimore. As many as 75 percent of children in some schools are on public assistance and median income in some neighborhoods is as low as $2400 per year. Notwithstanding, it would be very unusual for a house to have no television set. (Keller's (1963) survey of a similar group in New York City showed 100 per cent TV ownership.) Middle class children also have television, but there is differential exposure (Bailyn, 1959) with lower class children having much higher rates than middle class children. Pre-school slum children spend a large portion of their time watching TV. Most of the verbal models presented on TV emanate from adult speakers. Even cartoon programs are cast in an adult idiom, and situation comedies, also popular with children, deal almost exclusively with adults. Commercials which are both strident and frequent are also good sources of simple models, especially since they are repeated verbatim over and over. (It is no accident that a large number of children respond "living" to "pleasant" because this is a part of a commercial linked to a local product.) The slum child, although deprived in many ways, is thus afforded a very large amount of vicarious exposure to simple discourse. There is little reason to doubt that high TV exposure would enhance language development in young children, because children who come from towns with TV have larger vocabularies than children from non-TV towns (Schramm et al., 1961).

Secondly, the direct exposure to adult speech (parents, neighbors, etc.) is in terms of simple verbal models. Some experimental work by Hess and his co-workers, directly relevant to this point, describes the constricted verbal environment of the slum child. Following a hypothesis stated earlier by Bernstein (1962), Hess and Shipman (1965) arranged for Negro mothers of four social levels (college-educated to lower-lower class) to interact verbally with their children. Interaction was recorded as the mothers taught their children sorting and simple classification tasks. Later the mothers were also questioned about how they would deal with certain hypothetical situations, like preparing the child to enter school. Differences in language by social class were marked, with middle class mothers using more speech, and more elaborate speech expressing alternatives and contingencies. The lower class mothers preferred simple, short sentences and gestures. Use of abstract words was directly correlated with social class level. Lower status mothers often conceptualized the child's behavior in terms of role prescriptions rather than in terms of individual needs and situations. They were unlikely to allow sufficient time before a decision to permit the child to assess contingencies or to analyze a situation. A rather different cognitive panorama is seen by upper status and low status mothers, and they relay these views directly to their children. The language deprivation is essentially a deprivation of meaning.

This work suggests that verbal models presented to a slum child in direct verbal interaction are apt to be simple and uncomplicated. We have already remarked that through TV a slum child may also be hearing mostly simple models. Thus, unlike the suburban child, the slum child may be exposed almost entirely to straightforward and redundant sets of utterances. Such exposure could favor early development, and lead to an early appreciation of form class properties, particularly for very common words and for verbal concepts at a low level of abstraction. By the same reasoning, a lack of redundance and possibly the negative transfer generated by the more complex verbal environment of the suburban preschooler might be a temporary handicap (seen in his short-lived inferiority to the slum child). Hierarchical and abstract meanings, partially learned, would not be very evident in word association measures. As the child continues to develop and requires more elaborate verbal models to stimulate growth, however, the suburban youngster begins to profit from his rich environment whereas the slum child falls progressively behind and fails to redeem his early promise.

An uncensored and unlimited exposure to TV, plus a world populated with persons who speak a simple and uncomplicated idiom, may be optimum for laying down form class concepts of the most basic and elementary kind, but a handicap for ultimate development. The quantity and the quality of the slum child's early verbal environment may be superior to that of the suburban child for development of language <u>at its most basic stages</u>. The disadvantages only become apparent subsequently. The syntax that the slum child is not exposed to may hinder communication later in a most insidious way by depriving the child of the tools of thought. The plain talk that aids

early development may lead to a conceptual poverty that is more than just a restriction in vocabulary.

Degree of urbanization, or a rural-urban differential, has been recently reported (Greenfield, Reich, and Olver, 1966) to influence cognitive growth on a much broader scale than we have been able to observe directly in the development of form class concepts. The difference is one between abstractness and concreteness, and the authors speculate that it is derived from a differential exposure to problem solving and communication in situations not supported by context. In Senegal and Mexico there are differences in abstracting ability between rural and urban children, and although the difference is small, it is similar in nature to larger differences separating children who have been to school from those who have not. The rural-urban dimension appears to overshadow any kind of strict ethnic grouping, because city-living Eskimos are much like urban children studied elsewhere. The conceptual development of unschooled Wolof children resembles that of lower class American children, particularly as differences increase with age. (It is not hard to equate poor schooling to lack of schooling, especially when absence rates are high as in slum children.)

Because of this widely observed rural-urban difference in broad areas of cognitive development plus our own observation of rural-urban differences in children very closely matched on other variables (Entwisle, 1966b), the relative in-migration rates of white and Negro slum dwellers, mentioned earlier, gains favor as an explanation for white-Negro differentials. Negro slum dwellers in Baltimore are much more likely than white slum dwellers to have come recently from the south, largely rural. Patterns observed in rural German children are also consistent with this rationale.

The slum school's impact cannot be isolated, but its influence is apparently not sufficient to maintain the advanced rate of development found in first-graders. Many studies document the increasing distance between disadvantaged and other children, and a huge survey by Coleman (1966) suggests that school quality per se has very little impact on verbal skills. Whatever the slum home lacks, the slum school may be unable to compensate for. Perhaps class-wise dialect cleavage prevents effective communication, because middle class teachers have semantic systems that differ from those of their lower class pupils. The curriculum perhaps is not designed either to capitalize upon the advantages of a lower class environment or to compensate for its deficiencies. The school environment could even be highly favorable in terms of cognitive factors but cognitive factors may become irrelevant as affective factors become increasingly pressing. The slum child's experience of failure and strong feelings of inablility to influence the environment (see Coleman, 1966) could completely overshadow even optimum cognitive factors.

IV. DISCUSSION

Discussion. Practically nothing is known about the transmission of linguistic habits from one generation to the next, although the wide differences in linguistic usage between social classes and subcultural groups must be initiated early in life. These differences are far from being matters of simple dialect geography or pronunciation. They are matters of such far-reaching consequence as different semantic systems and differing perceptual and cognitive styles. Evidence is accumulating that non-standard English is a cognitive as well as a social handicap. It hinders the child in problem solving efforts as well as in reading, and the deficits seem to accumulate.

The research summarized here is concerned with acquisition of fundamental concepts about words that will permit simple communication. Much further work is required to specify exact kinds of language deficits and their precise relation to environmental deprivation. For this purpose it seems most expedient to conceive social class or subcultural membership as a series of specific experiences to which a child is exposed.

Actually there is little research directed at social class or subcultural differences in American children's language behavior that cannot be explained by the well-documented association between socioeconomic status and intelligence level. The rare samples where IQ is controlled find class differences to be small but to increase with age (Cherry-Peisach, 1965; Deutsch and Cherry-Peisach, 1966). A specific cognitive deficit that might be class-related is a low level of auditory discrimination. Some data of ours indicate that children who live in very noisy environments may not develop the requisite discrimination abilities to learn to read well. Recent work stresses process rather than status variables as components of social class, i.e. the educational aspirations of parents for their children vs. income level (Bloom, 1964). Although income level is correlated with school attainment, it is easy to see how the two variables could be only indirectly related. Educational aspirations are only realistic if income is sufficient to finance continuing education.

There is no direct evidence available from our work relative to genetic influences. That very young children are not retarded, though, whereas older slum children are, suggests that it is chiefly environmental factors which are responsible for social class differences in language ability on our measures. Genetic influences as far as rural children are concerned are not so easily disposed of. Rural children may be drawn from a reservoir of persons with lower-than-average verbal talents because of selective migration. That is, over the years rural persons with the highest verbal abilities may have been most successful at making a rural-to-urban move, and those that remain have relatively low verbal ability. Although our data are certainly incapable of testing this notion, one would expect that inter-class mobility might be selective in the same manner as rural-urban mobility. Persons capable of upward mobility

by reason of superior verbal skills should rise from the slum population or the blue collar population to higher class strata, and thus lead to interclass differences in the urban and suburban groups. Such differences are not found, of course, especially at first-grade when such effects should be most apparent. The genetic argument as an explanation for the rural-urban differentials thus loses some cogency although it cannot be completely discounted.

Finding of strong rural-urban differences on word association measures, and of minimal differences between urban groups, is congruent with results from a whole series of studies on cognitive style by Bruner and his co-workers cited earlier. They find rural-urban differences that resemble differences noted between schooled and unschooled children, and inter-cultural differences appear small when degree-of-urbanization is held constant. One reason advanced for the rural-urban divergencies is the greater abstractness of urban life which forces practice of verbal models not supported by context. Our observation of a falling-behind by slum children between first- and third-grades, and the evidence of impoverished verbal models to which the slum child attends, point to a similar cause for the slum child's rising verbal deficiencies.

Further study in more detail is now being undertaken to see how the responses themselves differ from one group to another. (It is known, for instance, that Amish children at third-grade not only give fewer paradigmatic responses but give more syntagmatic responses.) Labeling is generally considered a less complex mental activity than categorizing, and an examination of superordinate responses, now under way, may show that groups of the same level in paradigmatic development nevertheless differ in conceptual structuring. Also the total lexicon available for each group may give some clue as to the perceptual efficiency of the group as well as the extent of overlap between semantic systems.

Finally, it should be noted that our findings are entirely consistent with Chomsky's (1965) notion that exposure in no way decrees the direction which language acquisition takes, whatever its effect on rate. All the groups we have studied, including German-speaking, show growth in paradigmatic responses to about the same asymptotic levels, and the levels of development from one group to another are fairly stable even though groups differ in rate. If Chomsky's notion is correct, slum children may just not receive sufficient exposure to certain kinds of language ever to attain an asymptote in other areas of verbal competence. It could be true as well that there are stages in grammatical development where exposure to instruction could be "most efficient" for children whose extra-school exposure is insufficient, and this hypothesis is amenable to experiment.

V. SUMMARY

Children's word associations, which are closely related to grammatical competence and verbal development, seem to evolve through similar stages for several different American subcultural groups. The groups do differ in rate of evolution, however, and slum children are advanced at first grade and behind at third grade. The intelligence of the child and the geographical location of his home (urban vs. rural) are both influential factors. School differences and differential exposure to mass media are considered in relation to social class.

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FOOTNOTES

[1]See Acknowledgments, paragraph one.

[2]See Acknowledgments, paragraph two.

[3]The exact percentage is unknown because many children attend public kindergarten and then go to Catholic parochial first-grade. The total first-grade enrollment exceeds the kindergarten enrollment in spite of the departures to parochial school. There is also a net out-migration from the school population which has averaged over 1 per cent in recent years.

[4]These data are taken from census tracts where inner city schools are located. The tracts do not coincide exactly with the boundaries of areas that schools draw their pupils from, but neighboring City tracts are closely related. Census data are for 1959, and our school survey was carried out in 1965-66.

[5]Some fragmentary data cited by Meumann (1905) suggests that German children around the turn of the century may have similarly given sequence-type responses at considerably later ages than modern German children (see Entwisle and Muuss, 1967).

[6]We tried, unsuccessfully, to study slum children with hearing deficiencies, with the idea that their exposure to language would be greatly reduced. Hearing losses spring from many causes, but only those due to conduction defects would be suitable for study. It is a commentary on the success of modern public health measures that we could not locate enough children with hearing losses to form samples, although twenty years ago this probably would have been an easy task.